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Halloran et al.

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(54) **AUTONOMOUS ROBOT LOCALIZATION**

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(52) **U.S. Cl.**

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(57)

ABSTRACT

A location estimation system for use with an autonomous lawn mowing robot, comprises a plurality of synthetic surfaces positioned with respect to a mowable space in an environment, a radiation source coupled to the lawn mowing robot, a detector coupled to the lawn mowing robot and configured to detect radiation reflected by objects in the environment, and a controller configured to controllably direct radiation from the radiation source to scan the environment, and to vary at least one of an output power of the directed radiation and a scan rate of the directed radiation, as a function of detected radiation reflected from one or more of the synthetic surfaces.

(58) **Field of Classification Search**

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See application file for complete search history.

28 Claims, 14 Drawing Sheets

